

Missouri Schools Going Solar

Program Description

Purpose

Missouri Schools Going Solar (MSGS) exists to educate students, teachers and communities about the importance of electricity as an energy form, the value of renewable solar energy in meeting current and future energy needs, and solar energy technologies. This project serves K12 schools (or other institutions that offer outstanding opportunities for solar education) that have an interest in solar electric energy and the initiative to create a partnership with the Missouri Department of Natural Resources' Energy Center, AmerenUE and the local community to accomplish a solar array installation. The interconnected 1 kilowatt (kW) photovoltaic array will bear a small amount of electrical load for a school building. While the arrays will generate some electricity, the program offers an even greater opportunity for students, parents, teachers, government agencies, utilities, and communities to increase their awareness and familiarity with solar electric energy technologies that are successfully in use throughout the world. The Energy Center is managing the project on behalf of the partnership with AmerenUE which is contributing \$350,000 to Missouri Schools Going Solar.

Benefits

Schools chosen to participate in MSGS will benefit from a two-part program for energy education:

Photovoltaic Hardware: Part one includes the hardware and technical assistance to install a 1-kW interconnected photovoltaic array on school grounds. This array will generate a small amount of electricity but has the potential to generate lots of community and school interest, enthusiasm and understanding about clean, renewable solar electric energy. The standard MSGS package system will include a 1-kW pole-mounted array. The estimated cost of the hardware with installation is \$10,000 and will be provided by the Energy Center. Awarded schools may choose to "upgrade" the system to a larger or different type of array but will be responsible for any costs above a standard MSGS package. Applicants must identify cash match of \$2,500. Missouri Schools Going Solar recommends that this match be met through community fundraising to raise awareness of the project, but this is not a requirement.

Missouri Schools Going Solar will provide a free but mandatory training session on proper operation and maintenance of the photovoltaic hardware. Maintenance will be minimal but this mandatory training for facility and maintenance management will ensure that the school understands how to maintain its new equipment.

Energy Education:

Part two is an energy education program providing grade-appropriate interdisciplinary curricular materials and teacher training that is consistent with Missouri Department of Elementary and Secondary Education standards. The Gateway Center for Resource Efficiency, a division of the Missouri Botanical Garden, will implement this educational component of MSGS. The Gateway Center is a leader in energy education and will work to meet a school's individual needs.

Ideally suited for grades 4-7, this educational component will target the school's existing math and/or science curriculum to provide additional supplemental material and instruction about energy forms and sources with special emphasis on photovoltaic technology. Coupled with the solar array installation, this has been an effective method for energy education in other states that have offered this type of program. Specifically, a Gateway Center energy educator will work with the schools and provide direct training to teachers and co-teach students in the subject of energy efficiency and renewable energy. A half-day teacher training for up to ten teachers per school will equip teachers with sufficient knowledge to incorporate the supplemental curricular materials and activities into the classroom. Then, the school may choose one of two options: 1) to have Gateway Center work directly with one teacher and his/her classroom for more intensive "on-the-job training" from which the teacher will be able to train the other teachers in that school, or 2) to have Gateway Center work directly with all the teachers but not directly with the students so that the teachers each have some "on-the-job training." The student education goal of MSGS is to educate as many students as possible to become "solar ambassadors" in their community and enable them to explain energy issues and photovoltaic technology. The school, therefore, should choose the option that will help it best meet this goal.

Eligibility

Any Missouri K-12 school, public or private, that is a Missouri AmerenUE electric service customer may apply. Awards will intentionally be spread geographically within the Missouri AmerenUE electric service territory.

Cost Sharing

Awarded schools must contribute a minimum match of \$2,500 in cash. While the applicant is not required to have the funds ready by the application deadline, the anticipated sources of funding must be specifically identified. Contributions from private donations are acceptable but must be documented through a letter of commitment. Schools that intend to incorporate solar fund-raising activities into an MSGS project must have identified alternate funds of \$2,500 as backup. Awarded schools must submit their \$2,500 contribution before the energy education program and solar array installation begin.

Award Schedule

Missouri Schools Going Solar anticipates awarding up to 20 schools with photovoltaic arrays. School selection will occur in three cycles. Deadlines for applications and award dates are as follows:

	<u>Application Postmark Deadline</u>	<u>Award Notification</u>
Cycle 1	Friday, April 16, 2004	Friday, May 14, 2004
Cycle 2	Friday, October 29, 2004	Tuesday, November 30, 2004
Cycle 3	Monday, October 31, 2005	Wednesday, November 30, 2005

Applicants that do not receive awards during a specific cycle but want to be considered for a subsequent cycle must either resubmit applications or provide written notice requesting reevaluation of their original application by the appropriate deadline. All applicants will receive a notice of awards and awards will be posted on the Energy Center Web site at www.dnr.mo.gov/energy.

Selection Criteria

The selection process will attempt to identify schools that are capable of successfully implementing both parts of this energy education program: energy education in the classroom and installation of a 1-kW interconnected photovoltaic array. Proper implementation of a Missouri Schools Going Solar program will take significant dedication and time and only those schools that are very serious about integrating the photovoltaic array and energy education into existing curriculum should apply. Schools that best demonstrate a strong initiative and ability to gather district and community support as well as administrative and staff support at every level are most likely to succeed. Missouri Schools Going Solar seeks to educate not only the students involved in the education program, but the community at-large and, therefore, will attempt to identify applicants that are most likely to have impact within their communities.

Awards will be distributed on the basis of an equitable and objective selection process that includes the following general criteria:

- Likelihood of success as detailed in responses to the application and required action plan;
- Geographic location and population density (awards will be distributed to reflect the diverse community types within AmerenUE's Missouri electric territory);
- Economic status of students in the district;
- Results of site inspection (proposed array location value in generating public awareness).

Action Plan

To ensure that MSGS becomes an ongoing part of school activities, the school must integrate into existing curricula and school programs the MSGS energy education teacher training and curriculum supplements. A written action plan of no more than 750 words must accompany the application and specifically describe how the school will accomplish this task. It must explain how the school will involve students, faculty and staff, promote the photovoltaic array installation to the community and interact with the broader community concerning energy issues. Applicants should demonstrate that their approach will involve teachers, students and

administrators committed to making the installation one of its cornerstone learning experiences. Applicants are encouraged to form “solar partnerships” with local business, government, higher education and/or other potential partners to maximize the impact of the MSGS project.

When articulating its action plan, a school must:

- a. Identify a specific staff member who has been designated “solar program coordinator.” Cite qualifications of this staff member to serve as coordinator and specific steps the coordinator will take to maximize the impact of the MSGS project. Describe the coordinator’s ability to work with administration, facilities personnel, teachers, and the community at-large.
- b. Describe how the school has recruited a team of teachers committed to the program and how the solar program coordinator will work with them, once they are trained, to achieve MSGS goals.
- c. Describe how the school will partner with the local community, local media and institutions, and local businesses to build awareness of the photovoltaic array and energy issues in general.
- d. Describe a community open house or other public event to be held within six months of installation so that the general community can learn how the photovoltaic array functions.
- e. Describe any related solar or energy education activities currently used or planned in the school.
- f. Identify who will be responsible for care and maintenance of the photovoltaic hardware and why this person(s) is the appropriate choice.
- g. Identify who will oversee and be available for the installation of the photovoltaic hardware and why this person(s) is the appropriate choice.

Signed Agreement

Receipt of award requires the recipient to enter into a signed agreement with AmerenUE and the Missouri Department of Natural Resources. A copy of the agreement is available online or by contacting the Project Manager listed below. This document must be signed by an authorized official and returned within 45 days of the award notification date. Note that commitment requirements of the participating schools are listed in the Signed Agreement document and include financial, maintenance, education, and insurance requirements. ***Please review these commitments prior to completing an application.***

Contacts

For questions about Missouri Schools Going Solar, please contact:

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This document is available online at: www.dnr.mo.gov/energy. Please check this Web site regularly for updates to the MSGS program.